TMDL Workshop 10/30/01
Questions and Comments
Pasco, WA

TOTAL DISSOLVED GAS TMDLs
Oregon and Washington will issue TMDLs for their respective states on TDG on the Columbia and Snake River Mainstem. EPA will be issuing the TDG TMDLs on river segments where tribal water quality standards apply. Below are informal responses to questions and comments raised at the TMDL workshops held in Lewiston, Idaho, October 29, 2001 and Pasco, Washington, October30, 2001.

These questions and comments have helped to alert the states and others issues of concern to the community. They have already influenced some of the thinking regarding the TDG TMDLs. The meetings, questions and comments were informal in nature.

Formal Public Comment Periods will allow the public to make verbal and/or written comments on the draft TMDLs. All formal comments will be addressed in the final TMDLs under "Response to Comments".

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TEMPERATURE TMDLs
EPA has provided informal responses to questions and comments raised the TMDL workshops held in Lewiston, Idaho, October 29, 2001 and Pasco, Washington, October30, 2001. These responses have been shared wirh the states and tribes for their review.

The questions and comments have helped to alert EPA and others to issues of concern to the community. They have already influenced some of the thinking regarding the Temperature TMDLs.

The draft TMDL will be made available to the public in the Spring of 2002. EPA will hold a public comment period which will allow for verbal and/or written comments on the draft TMDL . Additional information on this process will be forthcoming.

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The meetings, questions and comments were informal in nature. The questions and comments have been divided into two categories: 1) questions for immediate clarification, and 2) questions for on-going consideration.

The questions for immediate clarification have been answered in writing. These are questions that can currently be answered with a high degree of certainty. The remaining questions have been listed without written responses. Answers to these questions would be speculative or may require further modeling or data. Even if questions have not been answered, they have been thought provoking and some have already resulted in re-thinking of aspects of the Temperature TMDLs.
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1) Broadly speaking, the two major contaminants are air and the sun?

The two pollutants under review are total dissolved gas and heat, which both affect the health of

riverine aquatic life. The TMDL will address the exceedance of state water quality standards for temperature and total dissolved gas (TDG) in the Columbia and Snake Rivers. TDG exceedances are caused by entrainment of air into the rivers due dam spill structures, and temperature exceedances are due to a variety of natural factors and human activities. One human activity is the construction of impoundments, which alters the river's response to natural changes in meterology.

2) **What is the TMDL going to do that current standards can't do?**
The TMDL will provide a plan which quantifies the amount of reduction needed from each source in order to achieve the current standards. As such, it provides a framework for planning needed implementation actions.

4) **Which takes precedence, ESA or CWA? How do you plan to reconcile these two laws?**
The TMDL will be developed to meet the requirements of the CWA. During implementation planning, both the CWA and ESA will be considered. In these efforts, the goal will be to strike a balance between the requirements of these two laws.

5) **How much total dissolved gas was present in the Columbia before Celilo Falls was flooded? What about TDG in a naturally flowing river?** No TDG data is available from this period. There is some TDG in a natural system caused by water falls, plant respiration and other natural processes. Flow is usually more turbulant than in reservoirs and we assume degassing occurs more quickly.

6) **Are late spawned sturgeon doomed under current conditions (if water temperatures reach 18 degrees C)?**
Sturgeon have very particular spawning needs, otherwise they are quite resilient. The sturgeon are not doomed, but the temperature is an impediment to spawning.

7) **Did you take into account upstream impacts, i.e. waters from Canada?**
For the TDG analysis, data from the Upper Columbia (upstream of Grand Coulee Dam) will be used in establishing an upstream boundary condition. The impacts of upstream conditions can be evaluated through the TMDL technical analysis. The TMDL can then be used as information for decision-making through the Transboundary Gas Group or other appropriate mechanism.

8) **What is the target for ESA? It seems that there are no set goals.**
This TMDL is being established pursuant to the requirements of the CWA which requires that all waterbodies be in compliance with State and Tribal water quality standards. The TMDL will quantify the level of pollutant (teat and TDG) reductions necessary to attain the standards. The target for the ESA is recovery of a species to a sustainable population that would allow for species delisting.

9) **TMDLs are geared toward maximum allowances, but fish needs for temperature vary according to season and stage of life. How sensitive will the TMDL be to these needs?** The RBM10 Model will be utilized to evaluate temperatures during all times of the year. Fisheries information has been considered during the development of the state water quality standards, on which this TMDL will be based.

10) **I believe that if we examined the data from Bonneville Dam between the years of 1939**

and 1956 we would find exceedences in WQS. It seems that we need to maintain some perspective.
Data from 1939 and 1956 indicate that the numeric criteria were exceeded. Since model results also indicate that the river naturally exceeded the numeric criteria during the hottest days of the year, the TMDL targets the narrative provisions of the states' water quality standards. As such, the TMDL will be written to attain a condition similar to that present with "no measurable temperature from anthropogenic activities."

11) **Is the final revision of Washington Water Quality Standards - 173-201 going to dovetail with this TMDL?**
The TMDL will be written to attain the current criteria. Since the revisions to Washington's water quality standards have not yet been finalized, we cannot predict how they will compare to the existing criteria. However, the Washington representatives on the TMDL coordinating team are aware of the latest proposed changes and do not think the current proposal would have a significant effect on actions required by this TMDL.

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TMDL QUESTIONS FOR ON-GOING CONSIDERATION
These questions have been listed without written responses. Answers would be speculative or may require further modeling or data. These types of questions and comments have already helped to alert EPA and the states to understand and consider issues of concern to the community. Some have already influenced aspects of the approach to the TMDLs.

The draft TMDLs will be made available to the public. Public comment periods will be help to allow for verbal and/or written comments on the draft TMDLs. Additional information on this process will be forthcoming.

Has anyone studied how deep the fish are swimming, since gas entrainment is greater lower in the water column?

Because water that passes through turbines does not entrain as much TDG as that which passes over the dams, we need to consider increasing power production at dams. This is a better alternative than constructing gas fired plants that would release hot water and CO2.

You should look at minimum temperature in winter, as well as snow pack in the same two 18-year periods that you used to examine summer flow and air temperature. These may impact cooling trends.

Did you take into account Hanford discharge, population growth and increased industry in your analysis of the two 18-year periods?

Have you considered turbidity or bacteria loading as a factor in determining temperature?

Have you looked at habitat requirements of other aquatic species, such as those lower in the food chain?